



BioEnergy Producers Association
Clean Technology for Renewable Energy

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January 10, 2005

The Honorable Rosario Marin, Chair and Members
California Integrated Waste Management Board
1001 I Street
Sacramento, CA 95814

Subject: **COMMENTS ON DRAFT CONVERSION
TECHNOLOGIES REPORT TO THE LEGISLATURE:
FEBRUARY 2005**

Dear Chair Marin and Members:

The BioEnergy Producers Association (BPA) is a coalition of private companies dedicated to the development and commercialization of environmentally preferable industries that produce renewable sources of power, fuels, and chemicals from agricultural, forestry and urban biomass, and plastic wastes. The Association has reviewed the subject consultant Report and, on the basis of comments presented herein, respectfully requests that your Board defer action until the following critical issues are addressed:

AB 2770 Legislative Mandates

Both the Executive Summary and the full Report should begin with a reference to the specific legislative mandates to which the Report responds (this information does not appear until page 14). This is necessary to set an appropriate and scientifically neutral framework for the information and recommendations that follow. Instead, the Report commences with a characterization of conversion technologies (CTs) as engendering "skepticism and fear" and "philosophical debate" on the part of "some stakeholders." This type of language sets a negative tone for the reader, and creates an initial bias that permeates later sections of the Report.

Redefinition and Reintroduction of Anaerobic Digestion as a CT

Assembly Bill 2770 directed the CIWMB to prepare a report on conversion technologies to determine their state of development,

their environmental and public health impacts, and their compatibility with the AB 939 diversion framework. The focus of the report was to be on "new and emerging conversion technologies, including, but not limited to, noncombustion thermal technologies, including gasification and pyrolysis, chemical technologies such as acid hydrolysis or distillation, and biological technologies, other than composting, such as enzyme hydrolysis."

Over the past several years, the Board has consistently classified anaerobic digestion (AD) as a variety of in-vessel composting, and has placed these technologies (with and without energy recovery) within its adopted composting regulatory framework, making them eligible for full diversion credit. AD was not evaluated as a CT in the Board's AB 2770 life-cycle and market impact assessment studies, and has been specifically *excluded* from the CT definition, as reiterated by Board staff in their December 14-15, 2004 staff report:

"Conversion Technology" means the processing, through noncombustion thermal, chemical, or biological processes, other than composting, of solid waste, including, but not limited to organic materials such as paper, yard trimmings, wood wastes, agricultural wastes, and plastics. A conversion technology facility produces products, including, but not limited to, electricity, alternative fuels, chemicals, or other products that meet quality standards for use in the marketplace. "Conversion Technology" includes, but is not limited to, catalytic cracking, distillation, gasification, hydrolysis, and pyrolysis. "Conversion Technology" does not include anaerobic digestion, biomass conversion, composting (aerobic or anaerobic) or incineration" (emphasis added).

Contrary to adopted Board policy and definitions, the subject Report redefines AD as a biochemical conversion technology, noting that, as such, it is ineligible for diversion credit. The BioEnergy Producer's Association includes anaerobic digestion companies in its membership, and is supportive of anaerobic systems as an *existing* tool in an integrated system for enhancing landfill diversion and the beneficial use of waste stream materials. The Report's attempt to reclassify AD systems as ineligible for diversion credit represents a giant step *backward* in State efforts to reclaim value from the waste stream. Moreover, a primary purpose of AB 2770 was to identify viable additional, *new* technologies, such as gasification, pyrolysis and hydrolysis/fermentation, that could take California's diversion and renewable energy potentials well beyond that possible with current technologies.

After unilaterally reclassifying AD systems, the Report goes on to compare them with thermochemical CTs and concludes, on pages 10 and 70, that "anaerobic digestion may be the cleanest and least polluting technology when compared to other conversion technologies." This determination is based, at least in part, on the perception that AD is "less controversial" by nature due to its alleged diminished potential for air toxics emissions. The BPA does not understand how this conclusion can be reached when, at the very least, no life-cycle assessment

has been applied to anaerobic systems and no emissions data are provided for the energy production aspects of anaerobic systems that produce energy.

Bias Against Thermochemical Systems

While the Report makes many important findings on the benefits of CTs (as currently defined by the Board), in the end, it seems to convey a bias against thermochemical systems that is not supported by the body of the Report and by worldwide knowledge about technologies such as gasification and pyrolysis. This bias becomes apparent in the Recommendations section of the Executive Summary.

The crux of the Report's bias stems from alleged concerns about emissions from thermochemical systems. While data on specific U.S. thermochemical systems is lacking because these facilities do not exist in the U.S., the Report correctly points out that there are many dozens of such facilities operating in Japan and Europe that operate well within the permit standards of these two advanced regions, both of which are on the leading edge of thermochemical and biochemical system development.

Members of our Association have provided the CIWMB with specific reference information on operating facilities in these countries where emissions data exists. These data show that emissions for pollutants such as dioxins and furans are below the detection limit of (0.1 ng/m³) as laid down in the Federal Emissions Act that governs all facilities in Germany, whether thermochemical or biochemical. Germany and Japan have, in many respects, more advanced waste prevention, recycling and product stewardship programs than we have in the U.S. and in California. In Europe there is no bias whatsoever against thermochemical systems because they view these technologies, along with anaerobic systems, as important means of reducing greenhouse gases from landfill and from the production of energy from fossil fuel extraction and combustion. It is landfills and fossil fuel production that are viewed as generating the emissions of concern.

The European and Japanese view is that there should be no bias against any technology based on assertions. They either meet federal and local permit requirements or they are not permitted. This is exactly as it should be, and there is no reason whatsoever why the CIWMB should infer that these technologies cannot pass regulatory muster and be permitted by applicable agencies in the State of California. The data are in fact available, and the Board's researchers, in our view, say as much. What they *haven't* done is dig out specific facility data from these operating plants. Notably, AB 2770 [Section 40507.1(d)] requires the Board to consult with *international governmental agencies* in preparing its Report. The absence of relevant European and Japanese emissions data is therefore a significant shortcoming of the current draft.

Based on the worldwide operating experience with thermochemical systems, which operate well within Japanese, German and EU standards and those established by the Report and the UC study, the Report's conclusion that these systems are not the "cleanest and least polluting technologies" compared with others is irresponsible and scientifically unsupportable.

Environmental Impacts

The life-cycle analysis (LCA) studies conducted by the Board to assess the environmental performance of CTs found that these thermochemical and biochemical processes have substantial benefits when compared not only to disposal, but to recycling and composting as well. These benefits include the best results for net energy production, criteria air pollutants and greenhouse gases; a net positive impact on recycling; and the potential to divert up to 80% of materials currently going to California's landfills. These are significant new findings that have far-reaching implications for policy recommendations to the Legislature, and therefore should be prioritized in the Report.

While such environmental benefits are noted in passing, they are clearly overshadowed or checkmated in the Report by the extended discussion of alleged air toxics concerns, and by the unsubstantiated claim noted above that AD systems are environmentally superior to the CT systems evaluated in the Board's LCA studies.

Market Impacts, Beneficial Use and Diversion Credit

The market impact assessment (MIA) studies conducted by the Board confirmed that CTs not only have the potential to return the lion's share of the post-recycled waste stream to beneficial use, but that such thermochemical and biochemical systems could also significantly enhance recycling rates for glass, metals, and plastics if diversion credit is granted. In other words, the addition of CTs to the integrated waste management system would both preserve and enhance the existing recycling infrastructure if implemented in congruence with the Board's policy of required findings for the granting of diversion credit (Board Resolution 2002-177, Option 3):

- The jurisdiction continues to implement the recycling and diversion programs in the jurisdiction's SRRE or its modified annual report;
- The facility complements the existing recycling and diversion infrastructure and is converting solid waste that was previously disposed;
- The facility maintains or enhances environmental benefits; and
- The facility maintains or enhances the economic sustainability of the integrated waste management system.

Significantly, these system benefits were found to accrue to CT development under the scenario of *full diversion credit*, i.e. when diversion is not artificially

capped at 10 percent. Such findings are unprecedented, and should also occupy front-stage in the Report and in the Board's recommendations to the Legislature.

Instead, the Report goes on to suggest that negative impacts on the recycling and composting infrastructure *could* result if diversion credit were granted to CTs and local diversion programs were discontinued (a theoretical impossibility if the Board's four criteria for the granting of diversion credit eligibility are followed). Further, the Report's sole recommendation on the diversion credit issue is that it should be considered "for biochemical technologies such as anaerobic digestion." Since, as noted above, AD is not classified as a CT by the Board and was not even included in the MIA, it is difficult to understand the basis for this proposal, or to explain the absence of a positive diversion credit recommendation for the *bona fide* CT systems assessed in the study.

Statutory Revision of the Hierarchy

The draft Report states, on page 9, that California's integrated waste management hierarchy "may need to be revised to incorporate conversion technologies as part of an integrated waste management approach and evolve into an integrated *resource* management approach." The example is given of the European Union's hierarchy, which incorporates energy recovery and other beneficial re-use alongside recycling in the definition of "recovery." The Report, however, fails to include this important conclusion among its Recommendations, despite the abundance of supporting data gathered in the AB 2770 studies.

The BioEnergy Producers Association urges your Board to formalize a recommendation to the Legislature that the hierarchy be revised to place first priority on source reduction, second priority on a more broadly defined concept of "recovery" (congruent with the advanced EU environmental framework), and last priority on environmentally sound disposal. Inclusion of conversion technologies in the "recovery" tier, along with recycling and composting, recognizes their common ability to divert waste stream materials from disposal and return them to beneficial use. This critical updating of the hierarchy is consistent not only with advanced environmental frameworks in Europe, but also the State of New York, which recognizes beneficial use when waste materials are used in "*a manufacturing process to make a product or used as an effective substitute for a commercial product or used as a fuel for energy recovery.*"

Definitions

The subject Report concurs with earlier recommendations by the BPA and others regarding the need to revise statutory definitions to correct certain inaccuracies and to meaningfully incorporate conversion technologies. We disagree, however, with the approach proposed in the Report's Recommendations.

Specifically, the BPA recommends that the Board's existing definition of "Conversion Technology" (see p. 2 above) be added to the Public Resources Code. This definition serves the purpose of distinguishing CTs from recycling, composting, and disposal, while maintaining the flexibility to accommodate new processes in these rapidly evolving reuse industries. We see no reason to create and codify separate definitions based primarily upon the criterion of process temperatures. Some existing CT systems incorporate both thermochemical and biochemical processes, while new entrants to the marketplace may employ processes not yet anticipated.

For the same reasons, we feel that codifying separate definitions for individual CT processes, such as gasification, sets an ill-advised and unnecessary precedent. As illustrated by the scientific inaccuracy of the existing "gasification" definition, such legislative language may not reflect the variability extant in the industry, and is subject to obsolescence over time. The BPA urges the Board to support deletion of the "gasification" definition from existing statute, reserving instead the delineation of specific CTs and associated performance standards for the regulatory domain.

Consistent with the addition of the Board's "Conversion Technology" definition to statute, the BPA supports the draft Report's recommendation to delete the existing "Transformation" definition and replace it with the "Combustion" definition as proposed. In light of these changes, however, consideration should be given to re-titling the current statutory definition of "Biomass Conversion" to "Biomass Combustion," which would eliminate potential confusion with CTs, and which would more accurately reflect the process of *burning* biomass for energy recovery.

Finally, consistent with recommended statutory changes to the integrated waste management hierarchy, a definition of "Recovery" similar to that of the European Union, would need to be added. For example: "Recovery means the reuse, recycling and extraction of materials and energy from solid waste, including, without limitation, recycling, composting, and conversion technology."

Report Recommendations and Board Leadership

AB 2770 requires the Board to include a report of specified content on new and emerging CTs as part of its annual report to the Legislature. The BPA is therefore concerned that the subject draft Report contains the following disclaimer on its title page: *"The statements and conclusions of this report are those of the contractor and not necessarily those of the California Integrated Waste Management Board, its employees, or the State of California."* We are hopeful that upon finalization of this Report, Board staff will assume responsibility for evaluating its content, and that the Board will take a formal position on its conclusions and recommendations.

AB 2770 has provided the Board with an unprecedented opportunity to advise the Legislature on statutory changes that can advance the State's landfill diversion and renewable energy goals. As noted in our earlier (November 22, 2004) communication to the Board, such revisions are also a prerequisite for the promulgation of meaningful CT regulations, and therefore a necessary component of the Report to the Legislature. To reiterate, the BPA urges your Board to forward the following policy recommendations to the Legislature, based upon the data, findings, and conclusions of the AB 2770 studies:

- Revise Statutory Definitions (consistent with the above)
- Revise the Integrated Waste Management Hierarchy to include CTs as a "Recovery" strategy, along with Recycling and Composting
- Provide Discretion to the Board for Granting Full Diversion Credit to CT Facilities, Subject to Specified Findings (Board Resolution 2202-177, Option 3)

Should you have any questions regarding these comments, please feel free to contact me at 213-383-4380.

Respectfully submitted,



David Roberti, President
BioEnergy Producers Association

cc: Hon. Terry Tamminen, Cabinet Secretary
Hon. Alan Lloyd, Secretary, Environmental Protection Agency
Hon. Mike Chrisman, Secretary for Resources
Hon. A.G. Kawamura, Secretary for Food and Agriculture
Hon. William J. Keese, Chair, California Energy Commission
Hon. Joe Desmond, Deputy Secretary of Resources for Energy